



Automotive Grade Linux Developer BoF Session

Embedded Linux Conference

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What is AGL?

Collaborating to build the car of the future through rapid innovation

- Open source Linux-based collaborative project
- Hosted at Linux Foundation
- Focused on rapid innovation of vehicle software using the AGL Unified Code Base

Total of 9 OEMs supporting AGL!

*Accounts for approximately 50% of worldwide annual vehicle shipments**



*Sources (42.8M vehicles out of 86.4M):

https://en.wikipedia.org/wiki/List_of_manufacturers_by_motor_vehicle_production

<https://www.statista.com/statistics/275520/ranking-of-car-manufacturers-based-on-global-sales/>

Slide 3



Total of 9-10 OEMs supporting AGL!

Accounts for approximately 50% of worldwide annual vehicle shipments*



AGL Members – Almost 150 companies!

Platinum



Gold

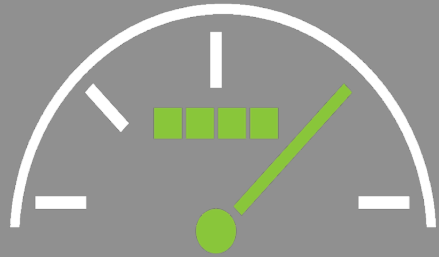


Silver



Bronze





AUTOMOTIVE
GRADE **LINUX**

the only
organization
addressing
all software in
the car



Infotainment



Instrument
Cluster



Heads-up
Display (HUD)



Telematics/
Connectivity



Functional
Safety



Advanced Driver
Assistance Systems
(ADAS)

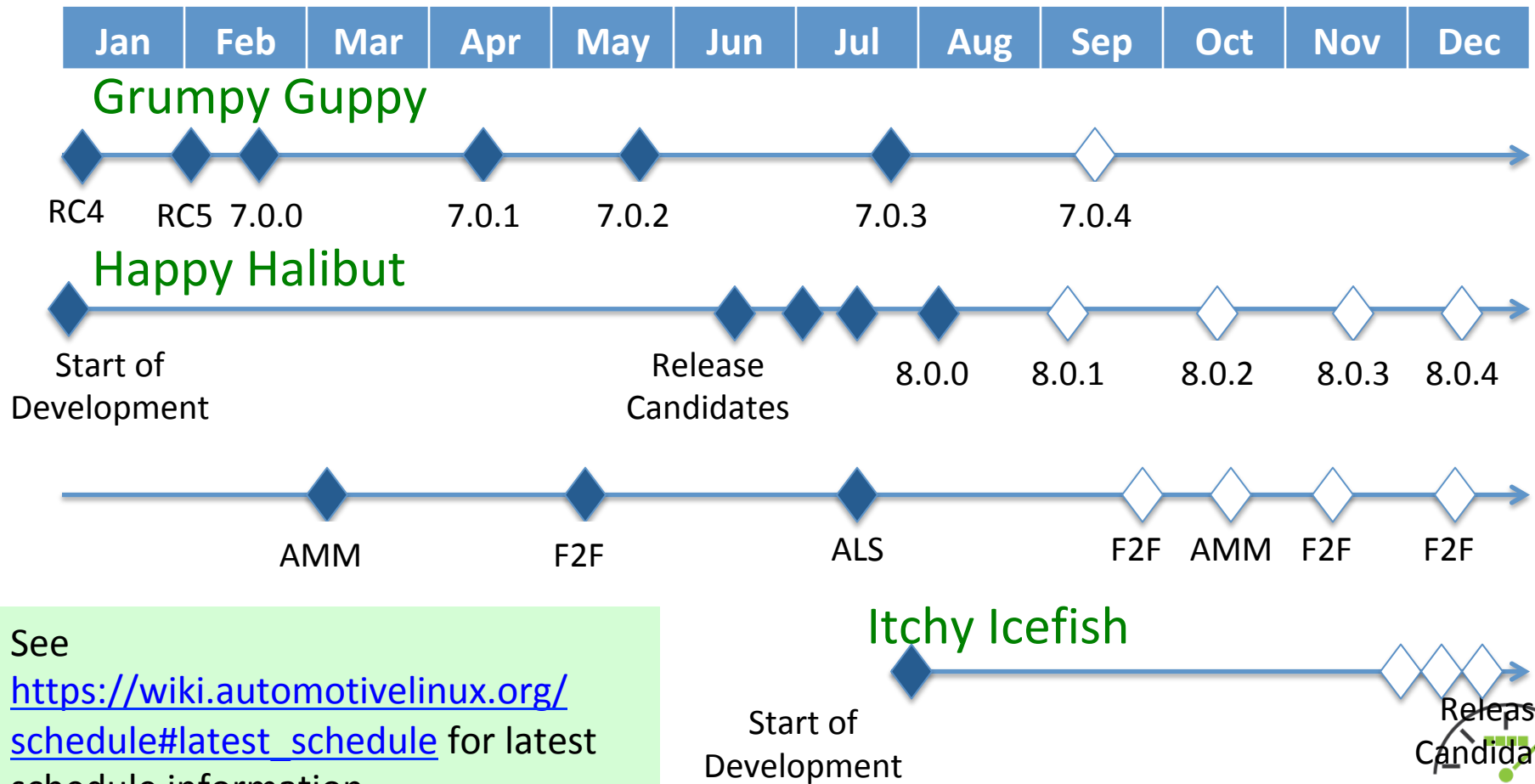


Autonomous Driving

AGL Unified Code Base

- Develop a single open source software platform for the entire industry, reducing fragmentation
- Provide at least 70% of the base platform for production projects
- Cultivate an ecosystem of developers, suppliers, and automotive expertise all using a single platform
- Reference hardware and applications available for adaptation

2019 AGL Schedule (Current)

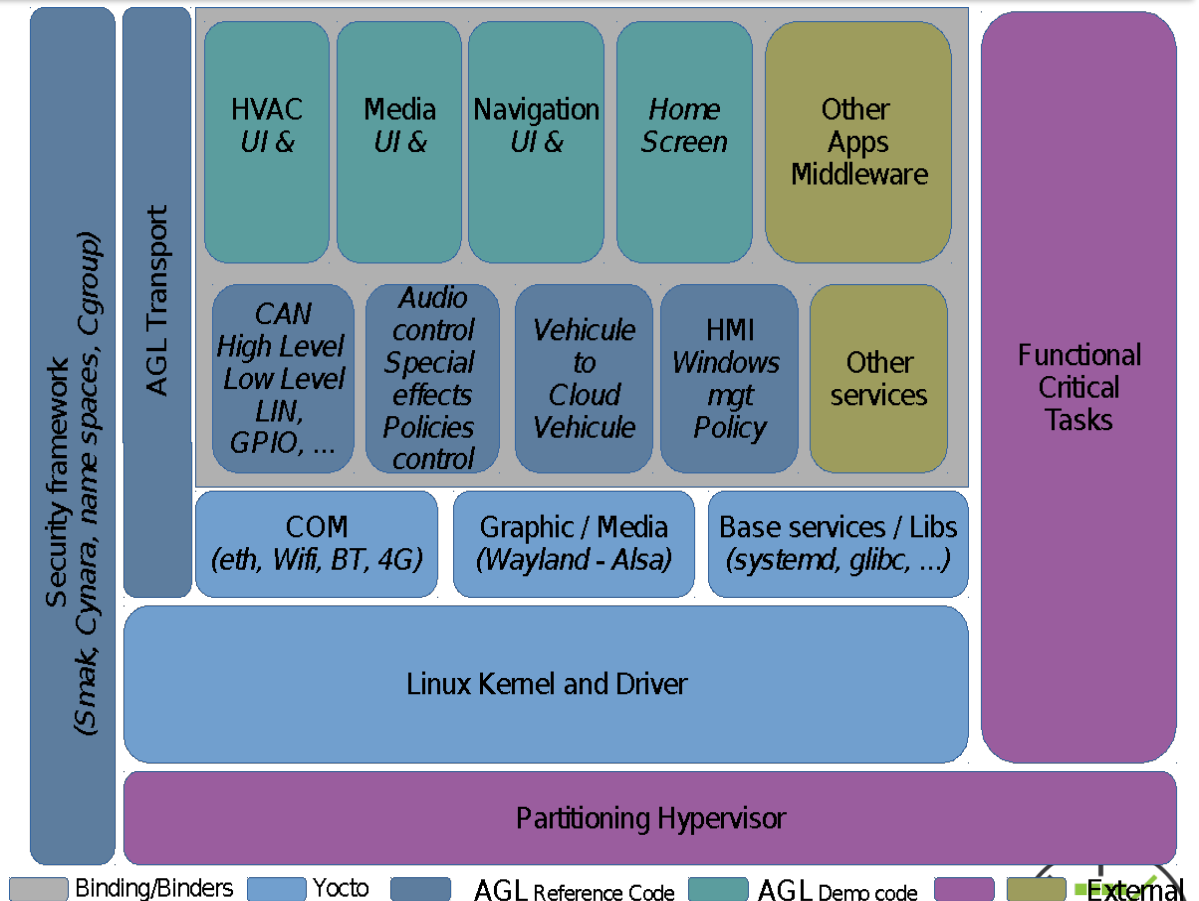


See
https://wiki.automotivelinux.org/schedule#latest_schedule for latest schedule information

AGL Architecture

Platform

- Base BSP
- Security
- AGL transport
- **Micro Services based**
- Middleware and App Binding / Binder Model
- Downloaded on platform
- Multi-ECU
- Car to Cloud
- Car to Car



AGL Binder/Binding

Security Context

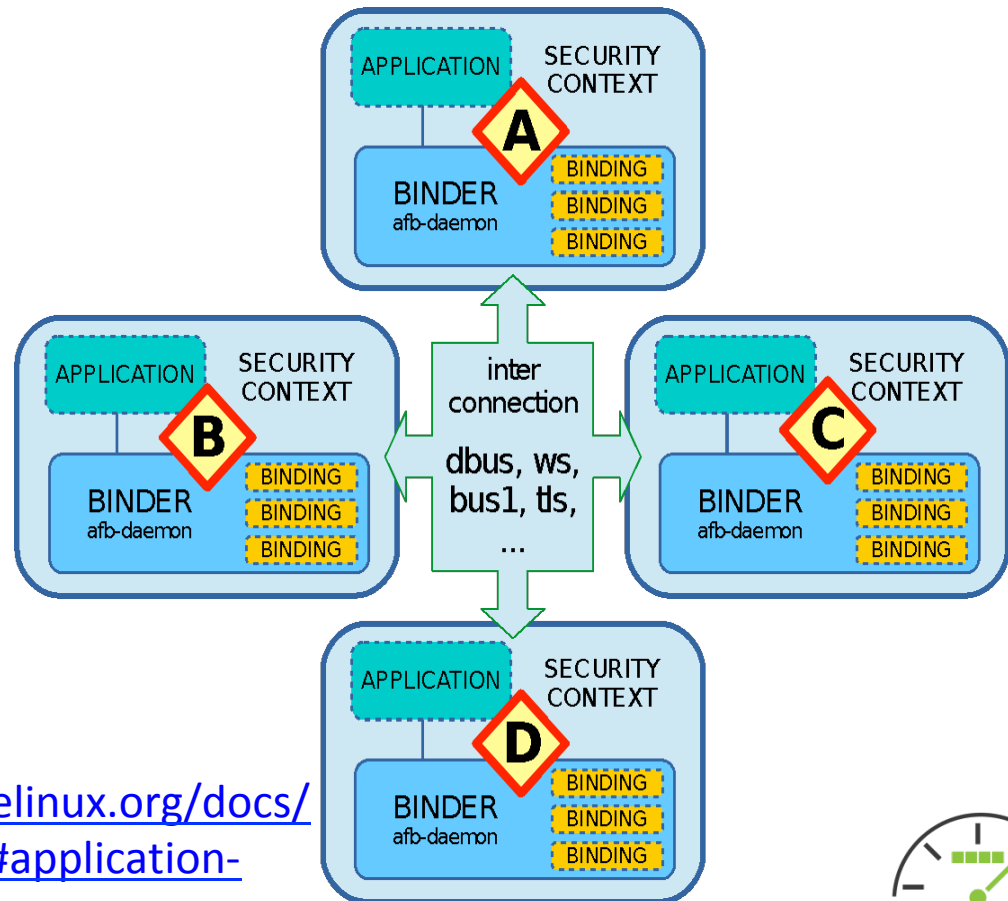
- SMACK based

Binder

- Secure environment for an App
- Container process
- Transport
- Security
- Standardized Async API structure

Binding

- Adds one API to the Binder
- Implements feature
- Multi thread support
- Standardized integration



http://docs.automotivelinux.org/docs/apis_services/en/dev/#application-framework-binder

AGL Binder/Binding

- Available binders include
 - Home Screen
 - Window Manager
 - Audio
 - Connectivity (Networking, Wifi, Bluetooth, Vehicle Signaling, Telephone, Phone Book, NFC)
 - Location (GPS, Geofence)
 - Media Player, Media Scanner, AM/FM Tuner
 - Signal Composer, HVAC

SDK for App Developers

- XDS Based SDK
- Docker image to eliminate host dependency issues
- Available for reference boards with published images that include graphics drivers
- Enables rapid AGL application development
Support for Qt (HTML5 planned!)
- No Yocto knowledge is needed or assumed for SDK users

<http://docs.automotivelinux.org/docs/devguides/en/dev/#development-kit-build-agl-application>

DEVELOPER RESOURCES

AGL Documentation

- Getting Started

<https://wiki.automotivelinux.org/start/getting-started>

- AGL documentation site

<http://docs.automotivelinux.org/>

- AGL Wiki

<https://wiki.automotivelinux.org/>

- AGL Jira

<https://jira.automotivelinux.org/>

Get The Code

- Pre-built binaries and source tar balls available
 - <https://www.automotivelinux.org/software/download>
- Latest Source Code and Build Instructions
 - <https://wiki.automotivelinux.org/agl-distro/source-code>
- Release Notes
 - <https://wiki.automotivelinux.org/agl-distro/release-notes>

AGL Code

- AGL Gerrit

<http://gerrit.automotivelinux.org/>

- AGL Git

<https://git.automotivelinux.org/>

Ask Questions

- Weekly Developer Call on Tuesdays

<https://wiki.automotivelinux.org/dev-call-info>

- IRC channel #automotive on freenode.net

Discussion about open source software for vehicles. No help for mechanical issues should be accepted from anyone on this channel.

- Weekly Newsletter

<https://wiki.automotivelinux.org/newsletter>

- Discussions Mail List

<https://lists.linuxfoundation.org/mailman/listinfo/automotive-discussions>

2019 F2F Workshops

- Mar 5-7 – [Tokyo](#) AGL AMM
- May 7-9 – [A Coruña, Spain](#) (Igalia)
- July 16 – Tokyo - Day before Automotive Linux Summit
- Sep 24-26 – [Berlin](#) (VW/ Carmeq)
- October 21 - 24 – [Monte Carlo](#) – AGL Fall AMM
- Nov 12 – 14 – TBD – CES Integration Session #1
- Dec 10 – 12 – San Francisco – CES Integration Session #2
- Jan 7-10 : CES 2020



Q & A

Q & A

- This is the segment where
 - You ask intelligent, well thought out questions
 - I ramble pointlessly and unintelligently
- And/Or
 - You ask “dumb” questions
 - I respond with concise, insightful, and well-reasoned answers



THANK YOU

